



# Biomass Program

## Integrated Biorefineries R&D

### North Central Texas Dairy Waste Control Pilot Project

Two years ago, the Texas Farm Bureau and the Texas Commission on Environmental Quality began a project to determine how technology could be used to manage manure on a dairy farm located in an impaired watershed.

Manure is a significant source of phosphorus, nitrogen, and potassium, and when manure enters bodies of water it poses a significant risk to the aquatic ecosystem. High concentrations of phosphorus can cause excessive growth of algae and other aquatic plants, robbing lakes and rivers of oxygen during decomposition of organic matter.

One of the major goals of this project is to remove 80% of the phosphorus from the liquid waste stream. Also important is that it be economically beneficial to the farm. The partners are currently

investigating the feasibility of producing biogas through anaerobic digestion of the manure for production of heat and power.

This Congressionally-mandated project is working to efficiently convert the wastes to biogas via an anaerobic process and then utilize the biogas for power generation and heating applications. Ideally, the system would produce an excess of electricity that could be sold to the local utility, while still meeting the heating needs of the farm which are estimated at 5.2 million Btu per year.

### R&D Pathway

Project investigators will investigate the system options for converting the biogas produced through anaerobic digestion of manure to heat and power.

### Benefits

- Converts animal wastes into heat and power
- Reduces nutrient loads on local watersheds
- Enhances profitability of dairy farms

### Applications

This project will test an animal waste management system and demonstrate that it can benefit both the environment and the dairy operation.

### Project Partners

Brazos River Authority  
Altria Group, Inc.  
Hamilton County dairy producer  
Texas Commission on Environmental Quality  
Texas Farm Bureau  
United Electrical Co-op  
USDA National Resources Conservation Service  
U.S. Environmental Protection Agency

### Project Period

FY 2004 – FY 2005

### For more information contact:

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Visit the Web site for the Office of the Biomass Program (OBP) at  
[www.eere.energy.gov/biomass.html](http://www.eere.energy.gov/biomass.html)

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Digester and oxidation pond currently under construction.